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BULLETIN

OF THE

TORREY BOTANICAL CLUB.

Vol. XX. Lancaster, Pa., August 10, 1893. No. 8.

Two new American Hepaticæ.

By Alexander W. Evans.

(Plates CLXII.-CLXIII.)

Lepidozia sphagnicola, n. sp. Dioicous, densely cæspitose, brownish-green varying to pale green; stems suberect, irregularly pinnate above, obtuse or very rarely terminating in a leafless flagellum; in transverse section orbicular, 6 cells in diameter, cortical cells about 12-seriate, slightly convex outward, about the same size as the inner cells, but with thicker walls; lateral branches short, leafy, usually obtuse; postical branches, when present, flagellate, hyaline, leafless, radiculose; radicles fasciculate, few in number in the upper part of the plant, simple or irregularly branched, sometimes ending in a sphæroidal expansion especially on the flagella; stem-leaves mostly distant, transversely inserted, quadrate, deeply 4-parted to within about 2 cells of the base, sinuses narrow, lobes subequal, lanceolate, strongly incurved, ending in a single cell and from 2 to 4 cells wide at base, usually entire, but sometimes bearing a small tooth (composed of from 1 to 3 cells) on the antical leaf-margin near the base; branch leaves similar to the stem-leaves, imbricated, more rarely bearing an antical tooth; stem-under leaves rectangular, subequally 4-parted to within 1 or 2 cells of the base, lobes subulate, 1 cell broad at the apex and usually 2 cells broad at the base; branch-under leaves similar to those of the stem, but usually smaller and only twice or thrice divided, with one of the lateral lobes longer and broader than the others; perianth terminal on a short postical branch given off from the lower part of the stem; bracts in 3 to 5 rows, those of the outer rows small, irregular in shape, usually bifid, ciliate, those of the inner 2 rows much larger, extending beyond the middle of the perianth, ovate, irregularly lobed and ciliate in the upper part; perianth ovate-fusiform, composed of a single layer of cells, strongly curved postically in the upper part, deeply 3-carinate with obtuse grooves and keels, the mouth strongly contracted and plicate, ciliate; ripe capsule and andrœcia not found.

Stems 0.5–1 cm. long, 0.09–0.12 mm. in diameter; leaves about 0.3 mm. long and 0.2 mm. wide; leaf-cells rectangular or quadrate, with thickened walls, mostly between 0.025 and 0.028 mm. long and between 0.014 and 0.016 mm. wide; under leaves of the stem 0.09–0.12 mm. long, and 0.14–0.16 mm. wide; inner perichætial bracts 2.5 mm. long and 1 mm. wide; perianth about 4 mm. long and 1 mm. wide.

Hab.—Among Sphagna in a bog. often accompanied by *Mylia anomala* (Hook.) S. F. Gray; Lebanon Swamp, Bethany, Connecticut (A. W. E., 1892).

Lepidozia sphagnicola belongs to Dr. Spruce's sub-genus *Micro-Lepidozia*, of which our only other Northern representative is *L. setacea* (Web.) Mitt. It differs from this species, which it somewhat resembles at first sight, in its larger size, in its deeply *four*-parted leaves, whose lobes are often 3 or 4 cells wide at base, in its 4-parted stem-underleaves, in its much larger perichaetial bracts, which are not deeply laciniate, and in its long, strongly carinate perianth with contracted mouth.

The species of *Lepidozia* occurring in the United States may be recognized from their leaves as follows:

- Leaf-segments extending to about the middle. *L. reptans* (L.) Dum.
- Leaf-segments extending to near the base.
  - Segments 4, 2–4 cells wide at base, basal membrane about 2 cells high. *L. sphagnicola*, n. sp.
  - Segments mostly 3, 2 cells wide at base, basal membrane 2–5 cells high, *L. setacea* (Web.) Mitt.
  - Segments 2 or 3, 2 cells wide at base, basal membrane less than one cell high. *L. chætophylla*, Spruce, var. *tenuis*, Pears.*

JUNGERMANNIA NOVAE-CÆSAREÆ, n. sp. Dioicous, pale green, varying to dark green or yellowish, growing in loose tufts or scattered about the bases of bog-plants; stems prostrate, simple or rarely dichotomous, bearing scattered, whitish radicles

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*Hepaticæ Natalenses, Christ. Videnskabs-Selskabs Forhandl. 1886, No. 3, p. 7, tab. v. (*Jungermannia nematodes*, Gottsche in Wright's Hep. Cubenses; *Cephalozia nematodes*, Aust. in Bull. Torr. Bot. Club. vol. vi. p. 302; *Lepidozia nematodes*, Spruce, Hep. Amaz. et And. p. 366, not *L. nemoides*, Tayl. Syn. Hep. p. 717).

in the lower part; leaves of the sterile stems usually distant, plane, quadrate or broadly ovate-quadrate, more or less narrowed at the base and very obliquely inserted, not decurrent, divided by an obtuse or lunulate sinus into 2 unequal, usually obtuse lobes, the antical being the larger, margins entire; leaves of the fruiting stems broader, less obliquely inserted often imbricated, irregularly 2–4-lobed, increasing in size toward the perianth; underleaves occasionally present, lanceolate or ovate-lanceolate, entire, free or connate with one or both adjacent side-leaves; ♀ bracts large, often broader than long, quadrate or orbicular-quadrate, 3–4-parted with narrow sinuses, lobes acute or obtuse, entire, sinuate or somewhat subdivided; bracteole single, ovate or obovate, entire or 2-lobed, connate with the innermost bract; perianth terminal, long-exserted, erect, cylindrical, obtusely 5-carinate to below the middle, composed of a single layer of cells in the upper three-fourths, thence of 2 layers down to very near the base, where it becomes 3 or 4 cells in thickness, the mouth contracted, minutely and irregularly denticulate; capsule small, oval; spores muriculate, reddish-brown, elaters similarly colored; perigonial spike tinged with purple, at first terminal but later innovating from the apex; bracts 2 to 5 pairs, imbricated, complicate, bilobed with obtuse lobes and sinus, oligandrous; gemmiparous stems small, or often depauperate, bearing the minute oval gemmæ at their apices and on the margins of modified upper leaves.

Sterile stems about 1 cm. long and 0.18 mm.–0.25 mm. in diameter; fertile stems longer and thicker; leaves of the sterile stems usually between 0.9 and 1.1 mm. in length and breadth; leaf-cells medium-sized, polygonal, thin-walled, usually between 0.034 and 0.046 mm. in diameter in middle of leaf, but sometimes below 0.030 mm. and more rarely above 0.050 mm.; inner perichaetial bracts 2–2.5 mm. long and 1.75–2 mm. wide; perianth 3 mm. long and 0.8 mm. wide; spores mostly 0.012–0.014 mm. in diameter; elaters 0.1 mm. long and 0.008 mm. thick.

Hab.—In peat bogs; Atsion and Pleasant Mills, New Jersey (A. W. E.); in a wet path through boggy ground, East Haven, Connecticut (A. W. E.).

In spite of the occasional presence of underleaves, this species bears some resemblance to *Jungermannia incisa*, Schrad.; it differs from that species most markedly in its pale color and looser habit, in its usually 2-lobed and explanate leaves with entire margins, and in its cylindrical perianth; its leaf-cells, too, are larger, less chlorophyllose, and with thinner walls.

NEW HAVEN, Conn.

Explanation of Plates.

(PLATE CLXII.)

Lepidozia sphagnicola, n. sp.

Fig. 1. Plants, natural size.
Fig. 2. Part of stem, postical view.
Fig. 3. Stem-leaf.
Fig. 4. Branch-leaf.
Fig. 5. Stem-underleaf.
Figs. 6–8. Branch-underleaves.
Fig. 9. Inner bract.
Fig. 10. Perianth.

(PLATE CLXIII.)

Jungermannia Novæ-Cæsareæ, n. sp.

Fig. 1. Plants, natural size.
Fig. 2. Apex of stem with perianth, postical view.
Fig. 3. Antheridial stem, antical view.
Figs. 4–5. Parts of sterile stems, postical view.
Figs. 6–7. Perichaetial bracts (fig. 7 showing connate bracteole).
Fig. 8. Transverse section of perianth.
Fig. 9. Teeth from mouth of perianth.

A Study of the Scale-characters of the Northeastern American Species of Cuscuta.

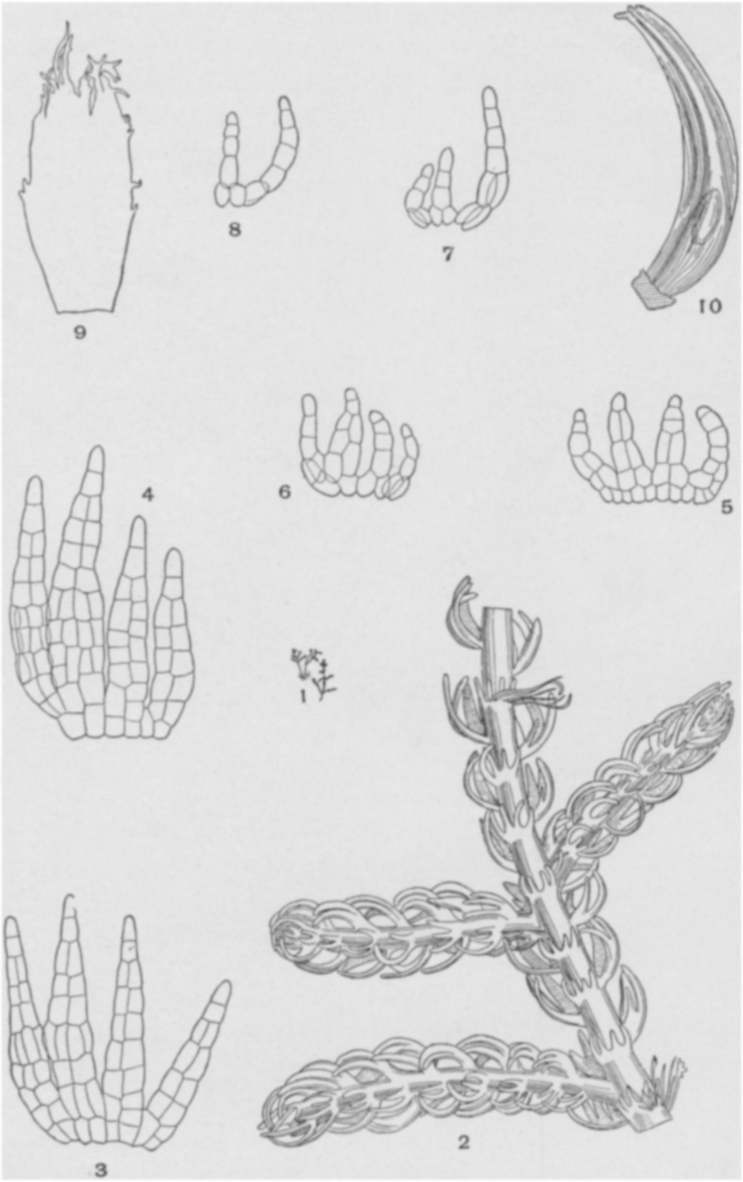
BY W. D. MATTHEW.

(PLATES CLXIV.–CLXV.)

In the schemes for the classification of *Cuscuta*, the scale-characters are given but small prominence, though it would seem that as a convenient means of distinguishing the species one from another they may be of considerable service. They vary a great deal in the different species, but are apparently quite constant in each and seem to belong to two or three distinct types. The classification here made is intended rather as a key than as any attempt at a systematic division.

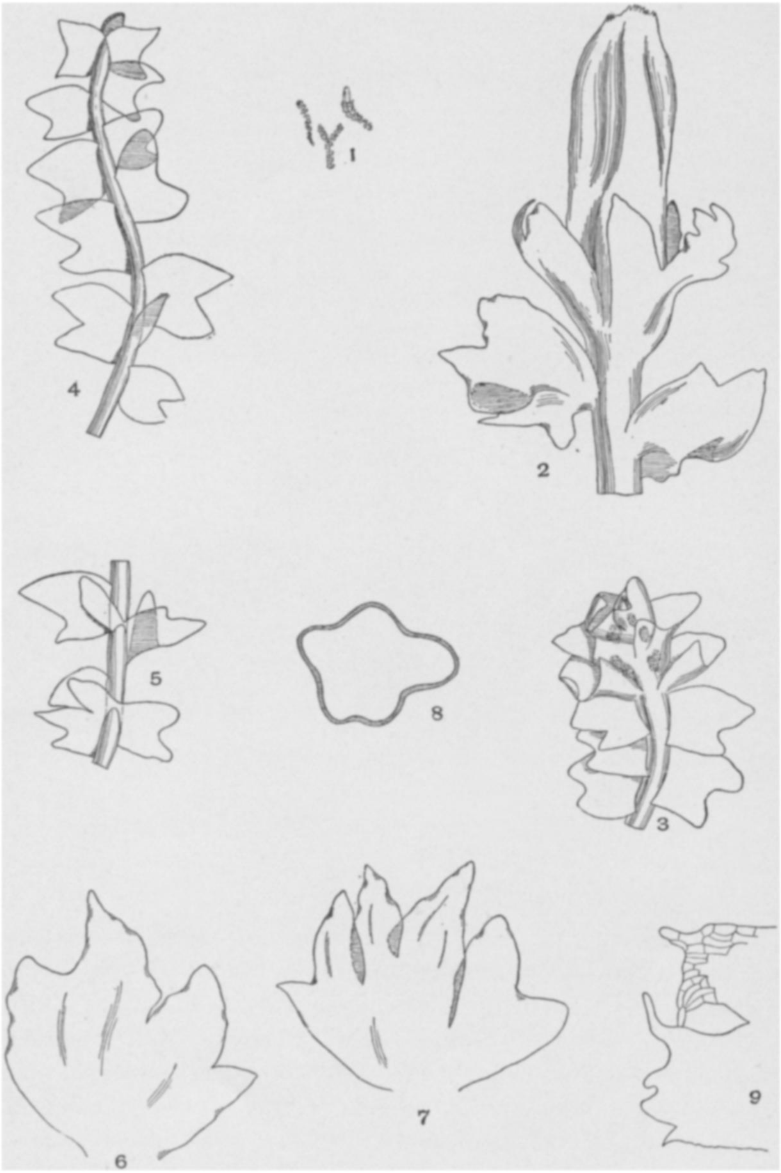
The scales may be separated from the first into two types, one of which is deeply crenulate, the other fringed with processes. To the first class belong the two introduced species, *C. Epilinum*

BULLETIN OF THE TORREY BOTANICAL CLUB.—PLATE CLXII.



LEPIDOZIA SPHAGNICOLA, EVANS.

BULLETIN OF THE TORREY BOTANICAL CLUB.—PLATE CLXIII.



JUNGERMANNIA NOVÆ-CÆSAREÆ, EVANS.